

Appl. No. 10/032,698  
Amdt. dated September 29, 2004  
Amendment under 37 CFR 1.116 Expedited Procedure  
Examining Group 2874

PATENT

### REMARKS/ARGUMENTS

#### STATUS OF THE APPLICATION

Claims 1-15, 17-19, 21, and 23-27 are pending. Claims 16 and 22 have been canceled. Claims 1, 2, 19, 25, and 27 have been amended. Support for the amended claims can be found in the specification. No new matter has been added.

Claims 1-4, 6-7, 10-13, 15, 19, 21, 23-25 and 27 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application Publication 2002/0117659 to Lieber et al. ("Lieber").

Claims 5, 8, 9, 14, 16-18, 22, and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Lieber.

#### THE CLAIMS

Reconsideration and allowance of the claims is respectfully requested in light of the amendments to the claims and following remarks.

Applicants respectfully submit that Lieber does not teach or suggest each and every feature of the present invention as claimed. For example, claim 1 recites "... an active surface structure comprising a first chemical species coupled to the nanowire structure. ... the electro-magnetic radiation illumination releases a portion of the first chemical species from the active surface structure ... ." Nowhere does Lieber teach or suggest this claimed combination. Examiner provides no support that a first chemical species is released upon illumination by electromagnetic radiation. That is, Lieber is completely silent about this claimed feature. According to the Examiner, Lieber discusses "stimuli such as electromagnetic radiation that produces a change in the signal resulting from differences in such properties as conductivity." (Office Action: p. 2) However, assuming in arguendo Examiner's statement is true, it does not follow that a first chemical is released upon illumination. In fact, as far as the Applicants can tell, Lieber never discusses a release of a chemical species from an active surface of a nanowire structure due to electromagnetic radiation illumination.

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In addition, claim 1 recites "... the first chemical species can be selected from O<sub>2</sub>, NO<sub>2</sub>, H<sub>2</sub>O, NO, or SO<sub>2</sub>." Examiner acknowledges that Lieber does not "explicitly disclose the use of O<sub>2</sub>, NO<sub>2</sub>, H<sub>2</sub>O, NO and SO<sub>2</sub> as a chemical species." (Office Action: p. 6, paragraph no. 8). This acknowledged fact is unavoidable given that Lieber never contemplates the release of a chemical species resulting from electro-magnetic illumination. Accordingly, Lieber clearly fails to discuss or suggest the claimed combination that a first chemical species selected from O<sub>2</sub>, NO<sub>2</sub>, H<sub>2</sub>O, NO, and SO<sub>2</sub> is coupled to the nanowire structure and released upon electro-magnetic radiation illumination.

Furthermore, claim 1 also recites "... the device is operable at room temperature." Examiner admits that Lieber fails to explicitly disclose this feature. This glaring omission by Lieber substantiates Applicants' argument that Lieber fails to disclose, or even consider, the general conditions of claim 1 as discussed above. The present invention as claimed "performs at room temperature, rather than conventional solid state sensing devices that operate at much higher temperatures. Such sensors can only operate at such elevated temperatures, which often require a heating element or the like." (Specification: paragraph [0010]).

Examiner states "... that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art." (Office Action: p. 5). However, the general conditions are not disclosed by Lieber. Lieber does not discuss, in the manner claimed, (i) electro-magnetic radiation illumination releases a portion of the first chemical species from the active surface structure, and (ii) the first chemical species can be selected from O<sub>2</sub>, NO<sub>2</sub>, H<sub>2</sub>O, NO, and SO<sub>2</sub>. The claimed combination of these features allows operation at room temperature. Routine skill in the art relying on the general conditions of Lieber would fail to provide the claimed device operating at room temperature.

In addition, Applicants respectfully reassert that Lieber fails to provide an enabling disclosure to teach one of ordinary skill how to practice the present invention as claimed. For example, Lieber clearly fails to discuss or suggest a composition that couples to a nanowire structure and a portion thereof is released upon electro-magnetic radiation illumination. Therefore, in accordance with MPEP § 2121, Lieber is not prior art under 35 U.S.C. § 102.

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Accordingly, for at least these reasons, claim 1 should be allowed. Claims 1-15 and 17-18, which depend from claim 1, should be allowed for at least a similar rationale, as well as the additional features they recite.

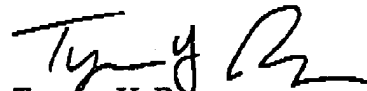
Similar rationales as discussed above for claim 1 can be applied to independent claims 19 and 27. Accordingly, claims 19 and 27 should be allowed for at least these reasons. Claims 21 and 22-26, which depend from claim 19, should be allowed for being dependent on claim 19, as well as the additional features they recite.

### CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

  
Tyrome Y. Brown  
Reg. No. 46,580

TOWNSEND and TOWNSEND and CREW LLP  
Two Embarcadero Center, Eighth Floor  
San Francisco, California 94111-3834  
Tel: 650-326-2400  
Fax: 650-326-2422  
TYB:asb  
60311128 v1